PB-217 770

WATER POLLUTION CONTROL RESEARCH AND TRAINING GRANTS: LIST OF 1963 AWARDS: RESEARCH GRANTS, RESEARCH FELLOWSHIPS, TRAINING GRANTS, DEMONSTRATION GRANTS

Public Health Service
Washington, D. C.

January 1964

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PB 217 770

Water Pollution Control Research and Training Grants

List of 1963 Awards

RESEARCH GRANTS
RESEARCH FELLOWSHIPS
TRAINING GRANTS
DEMONSTRATION GRANTS

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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45

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FOREWORD

The Federal Water Pollution Control Act authorizes the award of grants-in-aid for research, training, and demonstration projects, and for research fellowships.

The purposes of these grants are to encourage, cooperate with, and assist appropriate authorities, agencies, institutions, and individuals in the conduct of studies and training relating to the causes, control and prevention of water pollution.

Support is available for projects and fellowships designed to improve the sanitary condition of water, to conserve water for public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, agricultural, industrial and for other legitimate uses. Four types of grants are available.

Research Grants are awarded to individuals for the conduct of basic and applied research projects in water supply and pollution control. The purposes are to expand such research activities throughout the country, and to encourage investigators to undertake research in neglected areas.

Research Fellowships are awarded to individuals for the support of specialized research training in the institution of their choice. The purpose is to increase the number of scientists qualified to carry on independent research in water supply and pollution control.

Training Grants are awarded to institutions to establish or expand training in water supply and pollution control. The grants provide funds to support training programs in a variety of departments, including expansion and improvement of faculties, and payment of stipends to graduate students participating in the training program.

Demonstration Grants are awarded to public and private institutions and agencies to support investigations and studies of an applied nature, and to demonstrate the feasibility of new methods. These grants are designed to evaluate the application of research findings, and to expedite incorporation of new knowledge into routine water supply and pollution control practice.

Application: To obtain details concerning the various awards and to request forms for the submission of applications, write to:

Research and Training Grants Branch
Division of Water Supply and Pollution Control
Public Health Service
Washington, D. C. 20201

WATER POLLUTION CONTROL

RESEARCH AND TRAINING GRANTS

LIST OF 1963 AWARDS

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WATER POLLUTION CONTROL

RESEARCH AND TRAINING GRANT PROGRAM

SUMMARY OF AWARDS

FISCAL YEAR 1963

Grants	Number States	Number Institutions	Grants Awarded	Amounts Awarded
Research Grants	39	94	184	$3,294,353
Research Fellowships	27	37	45	268,475
Training Grants	19	24	35	1,100,000
Demonstration Grants	10	13	14	521,501
ALL GRANTS	42	109	278	$5,184,329

NOTES:

Grants Awarded. Some grants awarded in a fiscal year have beginning dates in the following fiscal year.

Amounts Awarded. The amounts awarded differ from payments ultimately made on grants because of continuing changes in the expenditures, grant periods, indirect costs, and other items.

WATER POLLUTION CONTROL

RESEARCH GRANTS FISCAL YEAR 1963

SUMMARY OF AWARDS BY STATES

State	Institutions Total*	Awarded 1963	Amount 1963
Alabama	1	1	$ 18,575
Alaska	1	2	37,968
Arizona	2	2	28,282
Arkansas	1	2	32,214
California	9	18	327,950
Colorado	3	3	72,487
Connecticut	1	1	5,633
Delaware	1		
District of Columbia	2	3	42,432
Florida	3	8	160,667
Georgia	1	1	15,305
Illinois	3	12	184,558
Indiana	1	1	6,828
Iowa	2	5	75,315
Kansas	2	3	40,174
Kentucky	1	1	22,897
Louisiana	2	2	22,704
Maryland	2	7	175,953
Massachusetts	4	9	227,642
Michigan	2	7	218,363
Minnesota	1	3	82,247
Missouri	2	4	97,533
Montana	1	2	44,196
New Hampshire	1	1	29,290
New Jersey	2	10	64,312
New York	6	9	158,106
North Carolina	3	5	75,462
North Dakota	2	2	32,943
Ohio	3	6	59,510
Oklahoma	1	2	47,284
Oregon	2	13	222,843
Pennsylvania	9	9	128,757
Rhode Island	1	3	96,365
Tennessee	1	2	33,092
Texas	4	4	84,249
Utah	2	4	57,094
Virginia	3	4	57,876
Washington	2	6	73,471
West Virginia	1	1	8,740
Wisconsin	1	4	86,833
Foreign	3	3	48,203

*Total includes all active Research Grants, both 1962 and 1963 awards

Active Research Grants 1963
40 States, 3 Foreign Countries
95 Institutions and Agencies
199 Research Grants Active

Research Grants Awarded 1963
39 States, 3 Foreign Countries
94 Institutions and Agencies
184 Research Grants Awarded
$3,294,353 Amount Awarded

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WATER POLLUTION CONTROL

RESEARCH GRANTS

FISCAL YEAR 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
ALABAMA			
University of Alabama University			
Walters, James V., Ph. D. Dept. of Civil Engineering	Nematodes in Sewage and Sewage Treatment Facilities	WP-00055-01	$18,575
ALASKA			
University of Alaska College			
Dugdale, Richard C., Ph. D. Inst. of Marine Science	Dynamics of the Nitrogen Cycle in Lakes	WP-00422-01 WP-00422-01S1	29,778 8,190
ARIZONA			
Arizona State University Tempe			
Klock, John Weston, Ph. D. Dept. of Civil Engineering	Engineering Bioassay Development	WP-00241-03	7,968
University of Arizona Tucson			
Bier, Milan, Ph. D. Dept. of Agr. Biochemistry	Isolation of Water-Borne Bacteriophages by Electrophoresis	WP-00516-01	20,314
ARKANSAS			
University of Arkansas Fayetteville			
Testerman, M., Ph. D. Dept. of Electronics and Instrumentation	A Continuous Multiparameter Water Quality Monitor	WP-00044-02	17,250
Ward, John C., Ph. D. Dept. of Civil Engineering	Turbulent Flow in Porous Media	WP-00528-01	14,964

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
CALIFORNIA			
California Inst. of Technology Pasadena			
Samples, Wm. R., Ph. D. Environmental Health Eng.	Sewage Reclamation by Pressurized Recharge of aquifers	WP-00227-03	$14,703
Vanoni, Vito A., Ph. D. Dept. of Civil Engineering	Dynamics of Density-Stratified Reservoirs	WP-00248-01	28,064
Engineering-Science, Inc. Arcadia			
Ludwig, Harvey F. President	Relation of Treatment Methods to Suspended Matter in Water	P.H. 86-63-84	15,525
Humboldt State College Arcata			
DeWitt, John W. Dept. of Fisheries	Improvement of Oxidation Pond Effluents by Organisms	WP-00020-04	18,000
Los Angeles State College Los Angeles			
Anderson, Dean A., Ph. D. Dept. of Microbiology & P. H.	Bacteria Utilizing Surfactants as Sole Carbon Source	WP-00327-02	5,950
Stanford University Stanford			
Franzini, Joseph, Ph. D. Dept. of Civil Engineering	Investigation of Infiltration Phenomena	WP-00246-02	19,780
Franzini, Joseph, Ph. D. Dept. of Civil Engineering	Evaporation Suppression and its Effect on Biota	WP-160-04	____*
McCarty, Perry Lee, Sc. D. Dept. of Civil Engineering	Ion Effects in Anaerobic Digestion	WP-482-01 WP-482-02	3,000 9,170
McCarty, Perry Lee, Sc. D. Dept. of Civil Engineering	Nutrient Requirements in Anaerobic Digestion	WP-483-01	8,000
University of California Berkeley			
Cooper, Robert C., Ph. D. Engineering Research Lab.	Treatment of Organic Industrial Wastes by Lagooning	WP-00231-03	14,609
Johnson, Joe W., M. S. Dept. of Civil Engineering	Oceanographic Factors in the Design of Ocean Outfall Sewers	WP-00156-05	12,522

*Active 1963 - Supported by funds awarded in 1962.

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLT	GRANT NO.	AMOUNT
CALIFORNIA (Cont.)			
University of California Berkeley (Cont.)			
McGauhey, Percy H., M. S. Dept. of Civil Engineering	Application of Foam Fractionation to Sewage	WP-00396-01	$18,170
McGauhey, Percy H., M. S. Dept. of Civil Engineering	Travel of Synthetic Detergents with Percolating Water	WP-00207-03	19,998
McGauhey, Percy H., M. S. Dept. of Civil Engineering	Partial Demineralization of Saline Sewage by Ion Exchange	WP-00544-01	28,200
Oswald, Wm. J., Ph. D. Dept. of Civil Engineering	Nutritive and Disease Transmitting Potential of Sewage G.own Algae	WP-00026-02	50,600
Pearson, Erman, Sc. D. Engineering Materials Lab.	Reaction Kinetics of Anaerobic	WP-00230-03	16,382
University of California Davis			
Biggar, James W., Ph. D. Dept. of Irrigation	Soil Interaction with Organically Polluted water	WP-00081-02	16,750
University of California La Jolla			
Jones, Galen E., Ph. D. Scripps Inst. of Oceanography	Effect of Organic Substances from Sea on Bacteria	WP-00650-05S1 WP-00650-06	858 24,823
University of Southern Calif. Los Angeles			
Mahr, John L., Ph. D. Allan Hancock Foundation	The Influence of Pollution on Marine Invertebrates	WP-00463-01	3,476
Bandy, L. Orville, Ph. D. Allan Hancock Foundation	Benthonic Foraminifera Relationship to Ocean Pollution	WP-158(04)	____*

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Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
COLORADO			
Colorado State University Fort Collins			
Corey, Arthur T. Dept. of Agricultural Eng.	Transport of Particles through Unsaturated Soils	WP-00349-01	$12,247
Morrison, S. M., Ph. D. Dept. of Microbiology	The Role of Animal Fecal Flora in Stream Pollution	WP-80(03)	_____*
Research Foundation Fort Collins			
Yevdjevich, Vujica M., Ph. D. Dept. of Civil Engineering	Unsteady Flow in Storm Drains	WP-00115-02 WP-00115-02S1	20,880 15,360
University of Colorado Medical School, Denver			
Dunlop, Stuart G., Ph. D. Dept. of Microbiology	Enteric Pathogens and Viruses in Irrigation Water	WP-119-10	24,000
CONNECTICUT			
University of Connecticut Storrs			
Collins, Ralph P., Ph. D. Botany & Inst. of Cell Research	A Study of Microorganisms Inducing Tastes and Odors in Waters	WP-00005-02	5,633
DELAWARE			
University of Delaware Newark			
Ames, William F., Ph. D. Dept. of Mechanical Eng.	Analysis of Trickling Filters (Mathematical Model)	WP-213(02)	_____*

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Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
DISTRICT OF COLUMBIA			
Levine, Benjamin S., Ph. D. Individual	U.S.S.R. Literature on Water Supply and Pollution Control	WP-00305-04	$14,805
National Academy of Sciences			
Smith, Waldo E., Exec. Secy. American Geophysical Union	XIIIth General Assembly of the IUGG	WP-00503-01	10,000
Resources Research, Inc.			
Levin, Gilbert V., Sc. D. Project Director	Harvesting of Algae	P.H. 86-73-75	17,627
FLORIDA			
Florida St. Board of Health Winter Haven			
Yount, James L., Ph. D. Biologist	Causes and Relief of Hyper-eutrophication of Lakes	WP-00216-03	20,854
University of Florida Gainesville			
Berner, Lewis, Ph. D. Dept. of Biology	Immature Insects of South-eastern River Beds	WP-00372-01	12,558
Black, Alvin Percy, Ph. D. Dept. of Chemistry	A Comprehensive Study of Water Coagulation	WP-00139-08	22,800
Bruun, Per, Dr. Tech. Science Coastal Eng. Laboratory	Fluorescent Tracing of Sediment in Coastal Areas	WP-00057-02 WP-00057-02S1	31,050 8,000
Calaway, Wilson T., M. S. Phelps Lab. for San. Research	Nematodes in Sewage Treatment and their Significance	WP-00508-01	22,480
Lackey, James B., Ph. D. Dept. of Civil Engineering	The Sulfur Relationships of Microorganisms	WP-00224-03	14,400
Smith, Paul Howard, Ph. D. Dept. of Bacteriology	Studies on the Methanogenic Bacteria in Sludge	WP-00198-04	23,716
University of Miami Coral Gables			
Fogarty, William Joseph Dept. of Civil Engineering	Frozen Storage and Effects on BOD test results	WP-00389-01	4,809

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
GEORGIA			
Georgia Inst. of Technology Atlanta			
Ingols, Robert S., Ph. D. Dept. of Applied Biology	Degradation of Chlorinated Organic Compounds	WP-188(03)	$_____*
O'Melia, Charles R., MSE School of Civil Engineering	The Role of Zeta Potential in Sand Filtration	WP-00382-01	15,305
ILLINOIS			
Illinois Inst. of Technology Chicago			
Kintner, Robert C., Ph. D. Dept. of Chemical Eng.	Coalescence of Drops in a Liquid Field	WP-366-01	7,383
Northwestern University Evanston			
Charnes, Abraham, Sc. D. Dept. of Civil Engineering	Systems Analysis of Municipal Sewage Treatment	WP-00019-04	17,289
Grieves, Robert B., Ph. D. Dept. of Civil Engineering	The Foam Fractionation of Petrochemical Waste Waters	WP-00412-01	18,623
University of Illinois Urbana			
Engelbrecht, Richard S., Sc. D. Dept. of Civil Engineering	Factors Influencing Free-Living Nematodes in Water Supplies	WP-00047-02	19,731
Engelbrecht, Richard S., Sc. D. Dept. of Civil Engineering	Fundamental Factors in Treatment of Iron-Bearing Waters	WP-00017-05	19,123
Ewing, Ben E., Ph. D. Dept. of Civil Engineering	Fate of Synthetic Detergents in Soil and Ground Water	WP-00018-04	18,417
Grim, Ralph E., Ph. D. Dept. of Geology	Atomic Structual Control of Selective Adsorption	WP-00399-01	15,818
Harmeson, Robert H., M. S. Illinois State Water Survey	Effect of Coarse Filter Media on Artificial Recharge	WP-00447-01	12,219
Larson, Thurston E., Ph. D. Illinois State Water Survey	Determination of Total Organic Carbon in Water	WP-00093-C2	9,888
Larson, Thurston E., Ph. D. Illinois State Water Survey	Corrosion and Tuberculation in Distribution Systems	WP-00132-08	_____*

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Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
ILLINOIS (Cont.)			
University of Illinois Urbana (Cont.)			
Larson, Thurston F., Ph. D. Illinois State Water Survey	Chromatographic Analysis for Organic Acids in Water	WP-270(04)	$15,560
Speece, R. E., Ph. D. Dept. of Civil Engineering	Controlling Factors in Methane Fermentation	WP-00394-01	20,197
Wolfe, R. S., Ph. D. Dept. of Microbiology	Microbiology of the Dilute Enrichment	WP-00016-05	10,310
INDIANA			
Purdue Research Foundation Lafayette			
Bloodgood, Don E., M.C.E. Dept. of Civil Engineering	Sludge Concentration by Pressure Wave Irradiation	WP-00232-02	6,828
IOWA			
Iowa State Univ. of Science and Technology, Ames			
Dodd, John D., Ph. D. Dept. of Botany & Plant Pathology	Ecology of Diatoms in Hard Water Habitats	WP-00221-03	8,660
Kirkham, Don, Ph. D. Dept. of Soils & Physics	Movement of Water from Waste Recharge Installations	WP-00070-02	20,530
Morgan, Paul E. Dept. of Sanitary Engineering	Design Requirements of Municipal Diatomite Filters	WP-00196-03	18,572
State University of Iowa Iowa City			
Morris, Robert L., Ph. D. State Hygienic Laboratory	Effect of Surface Water Actinomycetes on BOD vs COD	WP-00378-01A1	22,697
McDonald, Donald B., Ph. D. Dept. of Civil Engineering	Ecology of Actinomycetes in Surface Waters	WP-00518-01	4,856
KANSAS			
Kansas State University Manhattan			
Lambert, Jack L., Ph. D. Dept. of Chemistry	Ligand Exchange Reagents	WP-00326-02	7,329

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
KANSAS (Cont.)			
Kansas State University Manhattan (Cont.)			
Lambert, Jack L., Ph. D. Dept. of Chemistry	Determination of Ammonia	WP-00235-02	$_____*
University of Kansas Lawrence			
Loehr, Raymond C., Ph. D. Environmental Health Lab.	Aerobic Microbial Degradation of Lipids	WP-00341-01A1	17,580
McKinney, Ross E., Sc. D. Dept. of Civil Engineering	Complete Mixing Activated Sludge	WP-00248-02	15,265
KENTUCKY			
University of Louisville Louisville			
Jackson, Daniel F. Potamological Institute	Ecology of Phytoplankton Blooms	WP-00068-03	22,897
LOUISIANA			
Louisiana State University Baton Rouge			
Colmer, Arthur R., Ph. D. Dept. of Bacteriology	Autotrophic Iron Oxidizers from Acid Waste Waters	WP-00549-01	10,370
Tulane University New Orleans			
Suttkus, Royal D., Ph. D. Dept. of Biology	Pearl River Fishes: Index for Pre-pollution Surveys	WP-00082-04	12,334
MARYLAND			
Johns Hopkins University Baltimore			
Carpenter, James H., Ph. D. Dept. of Oceanography	Solubility of Oxygen in Pure and Natural Waters	WP-00169-04	12,650
Geyer, John C., Dr. Eng. Dept. of San. Engineering and Water Resources	Low-Flow Augmentation for Stream Pollution Abatement	WP-00153-06	45,024
Geyer, John C., Dr. Eng. Dept. of San. Engineering and Water Resources	Ground Water Storage Project	WP-00444-01	48,153

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Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
MARYLAND (Cont.)			
Johns Hopkins University Baltimore (Cont.)			
Shapiro, Joseph, Ph. D. Dept. of Sanitary Eng.	Inorganic-Organic Interactions in Natural Waters	WP-00199-04	$30,348
Shapiro, Joseph, Ph. D. Dept. of Sanitary Eng.	Reducing Secondary Effluent Phosphorus Concentration	WP-00099-02	17,790
University of Maryland College Park			
Marchello, Joseph M., Ph. D. Dept. of Chemical Eng.	Influence of Small Surface Waves on Mass Transfer	WP-00323-02	12,667
Stross, Raymond G., Ph. D. Dept. of Zoology	Control of Nuisance Algae in Lakes	WP-101-01	9,321
MASSACHUSETTS			
Harvard University Cambridge			
Fair, Gordon M. Dept. of Sanitary Eng.	Internal Hydraulic Work in Flocculation	WP-00024-03	18,262
Morris, J. Carrell, Ph. D. Dept. of Engineering and Applied Physics	Reactions of Dilute Aqueous Chlorine with Sulfamate	WP-00073-02	15,519
Stumm, Werner, Ph. D. Dept. of Water Resources and Sanitary Engineering	Chemical Aspects of Coagulation	WP-00098-02 WP-00098-02S1	9,720 5,040
Stumm, Werner, Ph. D. Dept. of Sanitary Engineering	Modes of Corrosion Inhibition in Natural Waters	WP-00043-02	14,983
Stumm, Werner, Ph. D. Dept. of Sanitary Engineering	Oxygenation Rate of Ferrous Iron in Natural Waters	WP-00013-04	14,571
Thomas, Harold A., Jr., Sc.D. Dept. of Environmental Eng.	Operations Research in Water Quality Management	WP-111-01	95,222
Massachusetts Health Research Inst., Inc., Lawrence			
Delaney, John E. Dept. of Public Health	Methods of Measuring the Coliform Content in Water	WP-00202-03	15,693

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
MASSACHUSETTS (Cont.)			
Massachusetts Inst. of Technology, Cambridge			
Harleman, Donald R., Sc. D. Hydrodynamics Laboratory	Mechanics of Aeration and Dispersion in River Pollution	WP-00071-02	20,040
Harleman, Donald R., Sc. D. Dept. of San. Engineering	Waste Water Recharge and Dispersion in Porous Media	WP-347-01	18,594
University of Massachusetts Amherst			
Feng, Tsuan Hua, Ph. D. Dept. of Civil Engineering	Nature and Disinfecting Power of Subchlorine Residuals	WP-208(02)	_____*
MICHIGAN			
Michigan State University East Lansing			
Ball, Robert C., Ph. D. Dept. of Fisheries & Wildlife	A Study of Fundamental Productivity in a Stream	WP-00011-06	4,485
Ball, Robert C., Ph. D. Dept. of Fisheries & Wildlife	Serum Stress Patterns as Related to Stream Ecology	WP-00369-01	14,116
University of Michigan Ann Arbor			
Borchardt, Jack A., Ph. D. Dept. of Civil Engineering	Organic Decomposition of Poised O-R Potential Levels	WP-00333-01	18,400
Borchardt, Jack A., Ph. D. Dept. of Civil Engineering	Sand Filtration of Discrete Suspensions	WP-329-01	14,960
Borchardt, Jack A., Ph. D. Dept. of Civil Engineering	The Use of Algae in the Treatment of Sewage Effluents	WP-00155-06 WP-00155-06S1	16,030 10,000
Gannon, John J., Ph. D. Dept. of Environmental Health	Investigation of River BOD Abnormalities	WP-187(03)	_____*
Powers, Charles F., Ph. D. Great Lakes Research Div.	Ecology-Water Quality Changes in Lakes Michigan, Erie	WP-00226-03	57,492
Velz, Clarence J., Prof. School of Public Health	Biological Extraction and Accumulation in Streams	WP-00091-02	82,880

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Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
MINNESOTA			
University of Minnesota Minneapolis			
Olson, Theodore A., Ph. D. Dept. of Civil Engineering	Benthonic Invertebrates as an Index of Water Quality	WP-320-01	$21,672
Schroepfer, George J. Dept. of Civil Engineering	Factors Affecting Thickening in Liquid Solids Separation	WP-00205-03	19,300
Smith, Lloyd L., Jr., Ph. D. Dept. of Entomology, Fisheries, and Wildlife	Effect of Paper Fiber Waste on Fish Eggs and Juveniles	WP-00223-03	41,275
MISSOURI			
The University of Missouri Columbia			
Campbell, Robert S., Ph. D. Dept. of Zoology	Recovery from Acid Pollution in Four Strip-Mine Lakes	WP-00379-01	15,307
Jeffrey, Edgar Allen, Ph. D. Dept. of Civil Engineering	Design Criteria for Livestock Waste Lagoons	WP-00032-02	15,000
Washington University St. Louis			
Skrinde, Rolf T., Ph. D. Dept. of Environmental and Sanitary Eng.	Chemical Oxidation of Trace Organics in Water	WP-00346-01	38,296
Skrinde, Rolf T., Ph. D. Dept. of Environmental and Sanitary Eng.	Detection and Removal of Organic Pesticides in Water	WP-00433-01	28,930
MONTANA			
Montana State College Bozeman			
Berg, Lloyd, Ph. D. Dept. of Chemical Eng.	Terpenes from Sulfate Pulp Mill Waste Liquor	WP-00510-01	9,760
Wright, John C., Ph. D. Dept. of Botany and Bact.	Hydrobiology of the Madison River and its Headwaters	WP-125-01	34,436
NEW HAMPSHIRE			
University of New Hampshire Durham			
Slanetz, Lawrence W., Ph. D. Dept. of Bacteriology	Enteric Bacteria and Viruses in Sewage, Water and Shellfish	WP-00009-07	29,290

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
NEW JERSEY			
Newark College of Eng. Newark			
Metzger, Ivan Dept. of Civil Engineering	Equalization of Liquid Wastes	WP-00041-02	$ 6,822
Rutgers, The State Univ. New Brunswick			
Faust, Samuel D., Ph. D. Dept. of Sanitation	Determination of Phenols in Water and Wastewater	WP-00365-01	8,050
Faust, Samuel D., Ph. D. Dept. of Sanitation	Organic Pesticides and Herbicides from Water	WP-00206-03	8,510
Heukelekian, Hovhaness, Ph.D. Dept. of Sanitation	Effect of Pure Organic Compounds on Activated Sludge	WP-00133-07	5,692
Heukelekian, Hovhaness, Ph.D. Dept. of Sanitation	Biochemical Oxygen Demand of Pure Organic Compounds	WP-00136-07	5,060
Heukelekian, Hovhaness, Ph.D. Dept. of Sanitation	Microbiology of Polluted and Unpolluted Waters	WP-00078-01	6,075
Heukelekian, Hovhaness, Ph.D. Dept. of Sanitation	Continuous Flow and Batch Cultures of Sphaerotilus	WP-00212-03	4,600
Lechevalier, Hubert A., Ph.D. Dept. of Microbiology	Odor Producing Substances of Actinomycetes	WP-00515-01	10,080
Starkey, Robert L., Ph. D. Dept. of Agr. Microbiology	Microbial Transformations of Organic Sulfur Compounds	WP-00006-02	4,773
Trama, Francesco B., Ph. D. Dept. of Zoology	A Pre-and-Post Impoundment Study on the Raritan River, New Jersey	WP-00059-02 WP-00059-02S1	3,772 878
NEW YORK			
Columbia University New York			
Gumbel, Emil J., Ph. D. Dept. of Industrial Eng.	Hydrological Applications of the Statistical Theory of Extreme Values	WP-00457-01	15,582
LaMer, Victor, Ph. D. Dept. of Chemistry	Tests of Filtration Theory to Water Coagulation	WP-00240-02	20,282

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
NEW YORK (Cont.)			
Cornell University Ithaca			
Barlow, John P., Ph. D. Dept. of Conservation	Oxygen Resources of Tidal Waters	WP-00176-05	$21,010
Behn, Vaughn C., Ph. D. Dept. of Sanitary Engineering	Analysis of Trickling Filter Experimental Model	WP-00234-02	_____*
Behn, Vaughn C., Ph. D. Dept. of Sanitary Engineering	Mass Transfer into Non-Newtonian Systems	WP-00229-03	17,136
Manhattan College New York			
O'Connor, Donald J., Ph.D. Dept. of Civil Engineering	Effect of Physical and Chemical Variables on Reaeration	WP-00142-05	_____*
New York University New York			
Edwards, Gail P., Ph. D. Sanitary Engineering Lab.	A Critical Study of Analytical Methods for Sea Water	WP-00339-02	17,448
Mehr, Emanuel, M. A. Data Processing and Computation Lab.	Computer Interpretation of Dye Dump Studies	WP-00507-01	10,728
Renesslaer Polytechnic Eng. Inst., Troy			
Washington, Donald R., Ph.D. Dept. of Civil Engineering	Effect of Loading on Assimilation in Activated Sludge	WP-00228-03	21,600
Syracuse University Research Inst. Syracuse			
Lundgren, Donald G., Ph. D. Dept. of Bact. and Botany	Physiology and Culture of Iron-Oxidizing Bacteria	WP-00548-01	15,460
Rand, Myrton C., Ph. D. Dept. of Civil Engineering	Kinetics of Oxidation of Sulfites by Dissolved Oxygen	WP-74-01	18,860
NORTH CAROLINA			
Duke University Durham			
Bryan, Edward Henry, Ph. D. Dept. of Civil Engineering	Biochemical Utilization of Chemically Combined Oxygen	WP-00316-02	13,340

*Active 1963 - Supported by funds awarded in 1962.

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
NORTH CAROLINA (Cont.)			
North Carolina State College, Raleigh			
Hayne, Don W., Ph. D. Inst. of Statistics	Biometrics of the Study of a Small River	WP-00502-01	$15,946
Univ. of North Carolina Chapel Hill			
Okun, Daniel A., Sc. D. Dept. of Sanitary Engineering	Oxygen in Waste Treatment	WP-00131-09	$14,970
Weiss, Charles M., Ph. D. Dept. of San. Engineering	Use of Fish to Detect Organic Insecticides in Water	WP-00010-07	15,726
Wicker, Warren J., M. S. Inst. of Government	Arrangements for Water Source in Selected N. C. Areas	WP-00352-02	15,480
NORTH DAKOTA			
North Dakota State Dept. of Health, Grand Forks			
Gustafson, Arthur A., B. S. Public Health Laboratory	A Study of the Bacterial and Viral Flora of Sewage Lagoons (Oxidation Ponds)	WP-00058-02	15,204
University of North Dakota Grand Forks			
Cooley, Albert M., M. S. Dept. of Chemical and Civil Engineering	Treatability of Potato Wastes	WP-00237-03	17,739
OHIO			
Kenyon College Gambier			
Pappenhagen, James M., Ph.D. Dept. of Chemistry	Determination of Ions in Wastes and Waters	WP-00137-08	3,680
Ohio State University Research Fdn., Columbus			
Randles, Chester I., Ph. D. Dept. of Microbiology	Aquatic Bacteria Related to Acid-Mine Drainage	WP-00147-03	8,634
Smith, Edwin Earle, Ph. D. Eng. Experiment Station	Study of the Sulfide-to-Sulfate Reaction Mechanism	WP-00340-02	20,360
Taft, Clarence, Ph. D. Dept. of Botany	The Diatoms of the West End of Lake Erie	WP-00317-02	9,540

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
OHIO (Cont.)			
University of Cincinnati Cincinnati			
Eye, John D. Dept. of Sanitary Eng.	Trickling Filter Effluent Quality Control by O.R.P.	WP-00065-02	$ 7,820
Lemlich, Robert, Ph. D. Dept. of Chemistry	Foam Fractionation With Reflux	WP-00161-04	9,476
OKLAHOMA			
Oklahoma State University Stillwater			
Gaudy, Anthony F., Jr., Ph.D. Dept. of Civil Engineering	Kinetics and Mechanism in Activated Sludge Processes	WP-325-01	21,429
Gaudy, Anthony F., Jr., Ph.D. Dept. of Civil Engineering	Response of Activated Sludge to Organic Shock Loads	WP-00075-02	25,855
OREGON			
Oregon State University Corvallis			
Behlke, Charles E., Ph. D. Dept. of Civil Engineering	Comprehensive Study of Ocean Outfall Diffusers	WP-00046-02	15,780
Burgess, Fred J., Prof. Dept. of Civil Engineering	Chemical-Physical Aspects of Deep Trickling Filters	WP-00171-05	11,227
Burgess, Fred J., Prof. Dept. of Civil Engineering	Waste Water Lagoon Criteria for Maritime Climates	WP-00185-04	13,606
Castle, Emery N., Ph. D. Dept. of Agr. Economics	An Economic Evaluation of Water Pollution Control	WP-107-01	31,051
Hall, James D., Ph. D. Dept. of Fisheries	Studies on Effects of Watershed Practices on Streams	WP-00423-01A1	30,697
Field, V. H., Ph. D. Dept. of Agr. Chemistry	Chemical Brush Control; Biochemistry and Toxic Hazard	WP-00477-01	24,972
Marvell, Elliot N., Ph. D. Dept. of Chemistry	Components of Kraft Mill Wastes and Their Toxicities	WP-00079-06	9,062
Harward, Moyle E., Ph. D. Dept. of Soils	Location of Charge and Chemical Properties of Clay	WP-00097-02	15,552
Morita, Richard Y., Ph. D. Dept. of Microbiology	Study of Beggiatoa Species	WP-00443-01S1 WP-00443-01S2 WP-00443-02	5,878 7,062 7,076

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
OREGON (Cont.)			
Oregon State University Corvallis (Cont.)			
Warren, Charles E., Ph. D. Dept. of Fish & Game Mgt.	Ecological Studies of an Experimental Stream	WP-00157-05	$26,921
Warren, Charles E., Ph. D. Dept. of Fish & Game Mgt.	Influence of Dissolved Oxygen on Fresh-Water Fishes	WP-00135-08	12,551
Portland State College Portland			
Ferguson, James W., Ph. D. Dept. of Chemistry	Water Pollutants Determinable by Gas Chromatography	WP-00063-02	6,265
Johnson, Clyde R., Ph. D. Dept. of Chemistry	Heavy Metal Poisons in Waters and Industrial Wastes	WP-00036-02	5,143
PENNSYLVANIA			
Academy of Natural Sciences Philadelphia			
Patrick, Ruth, Ph. D. Dept. of Limnology	Effect of Specific Chemicals on Diatom Populations	WP-00475-01	25,215
Carnegie Inst. of Tech. Pittsburgh			
Bugliarello, George, Sc. D. Dept. of Civil Engineering	A Synthetic Computer Language for Sanitary Engineering	WP-00415-01	15,260
Drexel Inst. of Technology Philadelphia			
Remson, Irwin, Ph. D. Dept. of Civil & Mech. Eng.	Research on Underground Movement of Rainwater	WP-00384-01	13,277
Pennsylvania Dept. of Health Harrisburg			
Goodwin, Evan H., B. S. Div. of Sanitary Eng.	Organic Pollutants in Fish and Surface Waters	WP-00214-03	12,652
Pennsylvania State Univ. University Park			
Lovell, Harold L., Ph. D. Dept. of Mineral Preparation	Sewage Effluent Purification by Interface Phenomena	WP-00424-01	17,190
Nesbitt, John B., Ph. D. Dept. of Civil Engineering	Aerobic Metabolism of Cyanogenic Compounds	WP-151(04)	_____*

*Active 1963 - Supported by funds awarded in 1962.

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
PENNSYLVANIA (Cont.)			
Robinette Research Lab., Inc., Berwyn			
Fisher, Sallie, M. D. Project Director	Liquid Ion Exchange in Foam Purification	P.H. 86-63-93	$14,521
University of Pennsylvania Philadelphia			
Humphrey, Arthur E., Ph. D. Dept. of Chemical Eng.	Bubble Motion and Mass Transfer in Non-Newtonian Fluids	WP-00286-02	5,893
Univ. of Pittsburgh, Grad. School of P. H., Pittsburgh			
Hill, William H., Ph. D. Dept. of San. Chemistry	Determination of Fluoride in Drinking Water	WP-249(02) WP-249(02S1)	_____* _____*
Shapiro, Maurice A., Ph. D. Dept. of Public Health Prac.	Determination of Organic Matter in Water	WP-00473-01	17,884
Swarthmore College Swarthmore			
Mangelsdorf, Paul C., Ph.D. Dept. of Physics	Long Salt-Bridge Methods and Liquid Junctions	WP-00460-01	6,865
RHODE ISLAND			
University of Rhode Island Kingston			
Fish, Charles J., Ph. D. Grad. School of Oceanography	Environmental Relationships of Benthos in Salt Ponds	WP-00023-04	53,952
Sieburth, John M., Ph. D. Narragensett Marine Lab.	Production of Pro-and Anti-bacterials by Marine Algae	WP-00100-02	21,060
DeLuise Frank J., M. S. Div. of Eng. Research & Dev.	Thermodynamics and Kinetics in Anaerobic Digestion	WP-00200-03	11,353
TENNESSEE			
Vanderbilt University Nashville			
Bonnev, Charles H , Ph. D. Dept. of Civil Engineering	Determination of Transition Zones in Settling Basins	WP-00039-02	13,052
Krenkel, Peter A., Ph. D. Dept. of Civil Engineering	Trubulent Diffusion and River Waste Assimilative Capacity	WP-00326-02	20,040

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
TEXAS			
Baylor University Waco			
Davidson, Floyd F., Ph. D. Dept. of Biology	Toxic Properties of the Blue-Green Algae	WP-00002-08 WP-00002-08S1	$ 4,554 1,870
Lubbock City-County Health Dept., Lubbock			
Cowgill, David M., M.D. Project Director	Multipurpose Modification of Playa Sinks	WP-00029-02	38,500
University of Texas Austin			
Malina, Joseph F., Jr., Ph.D. Dept. of Civil Engineering	Amino Acid Formation in Anaerobic Sludge Digestion	WP-00083-01	10,000
Odum, Howard T., Ph. D. Inst. of Marine Sciences	Metabolism of Marine Bays of Texas	WP-00204-03	29,325
The Wm. Marsh Rice Univ. Houston			
Busch, Arthur W., Ph. D. Environmental Eng. Research	A Short-Term Total Oxygen Demand Test	WP-12(04)	_____*
UTAH			
University of Utah Salt Lake City			
Gaufin, Arden R., Ph. D. Dept. of Zoology & Entomology	The Toxicity of Pesticides to Aquatic Invertebrates	WP-00003-08 WP-00003-08S1	10,000 7,450
Gaufin, Arden R., Ph. D. Dept. of Zoology & Entomology	Production of Taste and Odor Producing Algae in Reservoirs	WP-00334-02	5,196
Rees, Don M., Ph. D. Div. of Biological Sciences	Multipurpose Management Techniques for Waste Water	WP-00027-02	17,006
Utah State University Logan			
Hansen, Vaughn E., Ph. D. Eng. Experiment Station	Infiltration of Unsteady Open-Channel Fluid Flow	WP-00360-02	17,442

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LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
VIRGINIA			
Virginia Eng. Experiment Station, Blacksburg			
Nelson, Bruce W., Ph. D. Dept. of Geological Sciences	Chemical Exchanges Across Sediment Water Interfaces	WP-358(S1)	$22,303
Virginia Inst. of Marine Science, Gloucester Point			
Brehmer, Morris L., Ph. D. Pollution-Ecology Section	Toxicity of Industrial Wastes to Marine Animals	WP-35(R1)	18,900
Brehmer, Morris L., Ph. D. Pollution-Ecology Section	Effects of Thermal Effluents on Marine Organisms	WP-00092-02	10,680
Virginia Polytechnic Inst. Blacksburg			
Murphy, Nelson F., Ph. D. Dept. of Chemical Eng.	Removal of Color from Sulfate Pulp Wash Liquors	WP-00085-01	5,993
WASHINGTON			
Washington State University Pullman			
Dunstan, Gilbert, M. S. Dept. of Sanitary Engineering	Sphaerotilus Control for Irrigation Water	WP-00150-05	12,393
Hindin, Ervin Dept. of Sanitary Engineering	Analysis of Organic Pesticides by Gas Chromatography	WP-00215-03	15,479
Hindin, Ervin Dept. of Sanitary Engineering	Water Reclamation from Sewage by Solvent Extraction	WP-00040-02	14,637
Stokes, Jacob L., Ph. D. Dept. of Bact. and P. H.	The Biology and Chemistry of Sphaerotilus	WP-00239-03	12,858
University of Washington Seattle			
Carlson, Dale A., Ph. D. Dept. of Civil Engineering	Amino Acid Utilization in Activated Sludge	WP-00247-02	11,549
Gessel, Stanley P., Ph. D. Dept. of Forestry	Hydrologic Properties of Forest Humus Types	WP-00051-02	6,555
WEST VIRGINIA			
West Virginia University Morgantown			
Wilson, Harold A., Ph. D. Dept. of Plant Pathology, Bacteriology and Entomology	Sewage Decomposition in Acid Mine Drainage Waters	WP-00122-03	8,740

Water Pollution Control / Research Grants / Fiscal Year 1963

LOCATION AND INVESTIGATOR	PROJECT TITLE	GRANT NO.	AMOUNT
WISCONSIN			
University of Wisconsin Madison			
Fitzgerald, George P., Ph. D. Eng. Experiment Station	Detection of Limiting or Surplus Nutrients in Algae	WP-00297-02	$22,078
Hasler, Arthur D., Ph. D. Dept. of Zoology	Vitamin B_{12} in Lakes and its Ecological Significance	WP-236-02	——*
Hilsenhoff, Wm. L., Ph. D. Dept. of Entomology	Biological Factors in the Management of Lake Flies	WP-00209-03	22,555
Lightfoot, E. N., Jr., Ph.D. Dept. of Civil Engineering	Method of Glucose Utilization by Pure and Mixed Cultures	WP-00061-02	20,019
Villemonte, James R., Ph. D. Dept. of Civil Engineering	Hydraulic Characteristics of Circular Sedimentation Basins	WP-00183-04	22,181
FOREIGN			
AUSTRALIA			
Melbourne Water Science Inst. Limited			
Parker, Cecil D., Director	Functions of Solids in Lagoon Treatment of Sewage	WP-00321-01	15,310
BRITISH COLUMBIA			
British Columbia Research Council, Vancouver			
Walden, Cecil C., Ph. D. Dept. of Applied Sciences	Studies on Acidophillic Chemoautotrophic Bacteria	WP-00550-01	17,719
JAPAN			
Okaysma University Kurashiki City			
Kobayashi, Jun, Dr. Sc. Dept. of Agr. Chemistry	Strange Osteomalacia by Water Pollution from Cadmium Mining	WP-359	15,174

*Active 1963 - Supported by funds awarded in 1962.

WATER POLLUTION CONTROL

RESEARCH FELLOWSHIPS FISCAL YEAR 1963

SUMMARY OF AWARDS BY STATES

State	Institutions Total*	Awarded 1963	Amount 1963
Arizona	1	1	$ 5,500
California	3	7	35,100
Georgia	1	2	9,300
Illinois	1	3	18,500
Indiana	1	1	5,000
Iowa	1	3	18,000
Kansas	1	1	6,000
Maine	1		
Maryland	1		500
Massachusetts	1		500
Michigan	2	5	38,186
Missouri	1	2	12,500
New Hampshire	1	1	4,500
New Jersey	1		316
New Mexico	1	1	6,500
New York	3	3	16,900
North Carolina	1	2	12,500
Oklahoma	1	1	4,987
Pennsylvania	2	2	12,970
South Carolina	2	2	9,100
Texas	2	1	6,500
Utah	2	3	21,000
Virginia	1	1	4,300
Washington	1		500
Wisconsin	1		1,500
Foreign	2	3	18,360

*Total of active Research Fellowships, both 1962 and 1963 awards.

Active Research Fellowships 1963: 25 States, 2 Foreign Countries
37 Institutions
64 Research Fellowships

Research Fellowships Awarded 1963: 19 States, 2 Foreign Countries
29 Institutions
45 Research Fellowships
$269,019 Amount Awarded

WATER POLLUTION CONTROL

RESEARCH FELLOWSHIPS

FISCAL YEAR 1963

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
ARIZONA			
University of Arizona Tucson			
Dea, Stanley, J. Dept. of Civil Engineering	Role of Algae in Oxidation-Reduction Ponds	F1-WP-20,356-01	$ 5,500
CALIFORNIA			
San Jose State College San Jose			
Falk, Pelley Alvar Dept. of Civil Eng. and Applied Mechanics	Sanitary Engineering Research Problem to be Selected	F1-WP-22,285-01	4,300
Greenlee, Clifford Allan Dept. of Civil Eng. and Applied Mechanics	Sanitary Engineering Research Problem to be Selected	F1-WP-22,286-01	4,300
Stanford University Stanford			
Adrian, Donald D. Dept. of Civil Engineering	Unsteady Unsaturated Flow Through Soils as Applied to Infiltration	WPPM-16,565(1)	* 500**
Bruch, John Clarence Dept. of Civil Engineering	The Dispersion of Pollutants in Flow Through Porous Media	F1-WP-21,610-01	4,500
Hill, David W. Dept. of Civil Engineering	Degradation of Synthetic Organics in Soil	F1-WP-20,280-01	5,500
Linstedt, Kermit Daniel Dept. of Civil Engineering	Radioactivity Research in Water Supply and Pollution Control	F1-WP-22,084-01	4,500
Stratton, Frank E. Dept. of Civil Engineering	Studies on the Removal of Nitrogen from Secondary Sewage Plant Effluents	F1-WP-20,354-01	5,000

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**Supply Grant to Sponsoring Institution - 1963 funds.

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
CALIFORNIA (Cont.)			
University of California Berkeley			
Almgren, Howard P. Dept. of Civil Engineering	Biological Treatment of Waste Waters	WPPM-16,451(1)	$_____*
Bruvold, William H. School of Public Health	Study of Limits for Total Solids in Water	WPSP-16,452(1)	_____*
University of California Davis			
Carlson, John Stanley Dept. of Zoology	The Effects of Micro-Nutrients on Primary Production Organisms	F1-WP-21,612-01	6,500
GEORGIA			
University of Georgia Athens			
Mayberry, William Roy Dept. of Bacteriology	Biodegradable Synthetic Detergents, Insecticides, Herbicides	F1-WP-21,658-01	4,500
Todd, Russell Lee Dept. of Bacteriology	Bacterial Decomposition of Detergents in Sewage	F1-WP-21 02-01	4,800
ILLINOIS			
University of Illinois Urbana			
Dick, Richard Irwin Dept. of Civil Engineering	Biological Aspects of Water Pollution Control	F1-WP-21,613-01	6,500
Hall, Millard Wayne Dept. of San. Engineering	Causes and Control of Water Pollution	F1-WP-21,616-01	6,000
Patton, Thomas H., Jr. Dept. of San. Engineering	Biological Treatment of Wastes	WPPM-16,460(1)	_____*
Pershe, Edward Richard Dept. of Civil Engineering	Water Pollution Research Problem to be Selected	F1-WP-21,618-01	6,000
INDIANA			
Purdue University Lafayette			
Schaumburg, Frank David Dept. of San. Engineering	Anaerobic Digestion Research	F1-WP-22,348-01	5,000

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Water Pollution Control / Research Fellowships / Fiscal Year 1963

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
IOWA			
Iowa State University, Ames			
Dillingham, James H. Dept. of Civil Engineering	Computer Applications in Water Filtration Plant Design	F1-WP-20,084-01	$ 5,500
Harris, John R. Dept. of Civil Engineering	Sanitary Engineering Research Problem to be Selected	WPPM-15,992(1)	* 500**
Stoermer, Eugene Filmore Dept. of Botany & Pathology	Ecology of Diatoms in Hard-water Habitats	F2-WP-20,477-01	6,000
University of Iowa, Iowa City			
Paulson, Wayne Lee Dept. of Civil Engineering	Biological Utilization of Hydrolyzed Cell End-Products	F1-WP-20,477-01	6,000
KANSAS			
University of Kansas, Lawrence			
Burkhead, Carl Edward Dept. of Civil Engineering	Energy Relationships in Aerobic Metabolism	F1-WP-21,611-01	6,000
MAINE			
University of Maine, Orono			
Woodard, Franklin E. Dept. of Civil Engineering	Biological Oxidation in Lignins	WPPM-16,465(1)	*
MARYLAND			
Johns Hopkins University, Baltimore			
Warriner, Thomas R. Dept. of San. Engineering	Effects of Sewage Treatment on the Survival of Pathogens	WPPM-16,922(1)	* 500**
MASSACHUSETTS			
Massachusetts Inst. of Technology, Cambridge			
Tenney, Mark W. Dept. of Civil Engineering	Synthesis in Activated Sludge	WPPM-9,710(C1)	* 500**

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**Supply Grant to Sponsoring Institution - 1963 funds.

Water Pollution Control / Research Fellowships / Fiscal Year 1963

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
MICHIGAN			
Michigan State University East Lansing			
Bouck, Gerald Ray Dept. of Fisheries and Wildlife	Effect of Low Levels of Pollution on Blood and Muscle Proteins of Fish and Aquatic Invertebrates	WPPM-15,782(1) F1-WP-15,782-02	$ 500** 6,500
Kullberg, Russell G. Dept. of Botany	Factors Affecting the Distribution of Algae in Thermal Streams	F1-WP-19,590-01	6,000
Linton, Kenneth Jack Dept. of Fisheries and Wildlife	Electrophoretic Analysis of Serum Proteins as Pollution Indicator	WPPM-15,866(1) F1-WP-15,866-02	500** 6,500
Shull, Roger D. Dept. of San. Engineering	Radioactivity in Runoff and Groundwater Related to Radioactive Fallout	WPPM-16,639(1)	* 500**
University of Michigan Ann Arbor			
Pyper, Gordon Richardson Dept. of Civil Engineering	Sanitary Engineering Research Problem in Waste Treatment	F1-WP-21,207-01	6,500
Robohn, Walter Frederick Dept. of Environmental Health	Water Resources Allocation in the Neosho-Grand Basin: Kansas-Oklahoma	F3-WP-16,345-01	11,186
MISSOURI			
Washington University St. Louis			
Brower, George Russell Dept. of Environmental and Sanitary Engineering	Degradation of Organic Pesticides in Water	F1-WP-21,609-01	5,500
Buzzell, Jr., James C. Dept. of Environmental and Sanitary Engineering	Water Pollution Control Research Problem to be Selected	F1-WP-22,366-01	7,000
NEW HAMPSHIRE			
Dartmouth College Hanover			
Drobny, Neil Lester Dept. of Civil Engineering	Sewage Treatment in the Polar Regions	F1-WP-21,614-01	4,500

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Water Pollution Control / Research Fellowships / Fiscal Year 1963

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
NEW JERSEY			
Rutgers, The State University New Brunswick			
Flemer, David A. Dept. of Zoology	Primary Productivity Studies on the Raritan River	WPPM-16,454(1)	$ * 316**
NEW MEXICO			
New Mexico State University University Park			
O'Brian, Walter James Dept. of Civil Engineering	Aerobic Treatment and the Biochemical Oxygen Demand Test	F1-WP-22,185-01	6,500
NEW YORK			
Cornell University Ithaca			
Ragan, Robert Malcolm Dept. of Civil Engineering	Hydrology in the Control of Water Resources	F1-WP-18,983-01A1	6,500
Columbia University New York			
Lieber, Harvey Dept. of Public Law and Government	Water Pollution Control in the Metropolitan Setting	F1-WP-22,119-01	4,700
Rensselaer Polytechnic Inst. Troy			
Hetling, Leo Joseph Div. of Environmental Eng.	Assimilation of Organic Material by Algae	F1-WP-17,439-01A1	5,700
NORTH CAROLINA			
Univ. of North Carolina Chapel Hill			
Gakstatter, Jack Henry Dept. of Environmental Sciences and Engineering	Accumulation of the Chlorinated Hydrocarbon Insecticides in the Food Chain	F1-WP-21,673-01	6,000
Henderson, Jr., Oliver Dept. of Environmental Sciences and Engineering	Organic Productivity of Impounded Waters, Chemical Physical and Biological Factors	F1-WP-21,608-01	6,000

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**Supply Grant to Sponsoring Institution - 1963 funds.

LOCATION AND INVESTIGATOR	PROJECT TITLE	NUMBER	AMOUNT
NORTH CAROLINA (Cont.)			
Univ. of North Carolina Chapel Hill (Cont.)			
Rubin, Alan J. Dept. of San. Engineering	Electrochemical Method for the Determination of Fluorides	WPPM-16,462(1)	\$_____* 500**
OKLAHOMA			
Oklahoma State University Stillwater			
Lunsford, Jesse V. Dept. of Civil Engineering	Water Resources	WPPM-16,458(1)	_____*
Steffens, Margaret Jane Dept. of Zoology	Population Dynamics of Littoral Insect Populations in Oil Refinery Effluent Holding-Ponds	F1-WP-296-01	4,500
Tubb, Richard A. Dept. of Zoology	The Dynamics of a Herbivorous Insect Population in Oil Refinery Effluent Holding-Ponds	WPPM-15,408(1)	_____* 487**
PENNSYLVANIA			
Lehigh University Bethlehem			
Coutant, Charles Coe Dept. of Biology	The Effect of an Artificial Impoundment on the Microbiology of the Interrupted Stream	F1-WP-20,083-01	5,000
Hertz, Eleanor W. Dept. of Biology	Metabolic and Cellular Changes as Produced in Microorganisms and in Tissue Cultures Exposed to Toxic Materials such as Cyanides	WPPM-19,126(1)	_____* 500**
Pennsylvania State Univ. University Park			
Harwood, Moyle E. Dept. of Materials Research Laboratory	Relationships of Structures to Chemicals Properties of Phyllosilicate Minerals	F3-WP-21,617-01	7,470
SOUTH CAROLINA			
Clemson College Clemson			
McClure, Thomas Debose Dept. of Civil Engineering	Water Resources Engineering Problem to be Selected	F1-WP-22,085-01	4,800

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**Supply grant to Sponsoring Institution - 1963 funds.

Water Pollution Control / Research Fellowships / Fiscal Year 1963

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
SOUTH CAROLINA (Cont.)			
Univ. of South Carolina Columbia			
Holman, Henry Malcolm Dept. of Civil Engineering	Algae as a Means of Sewage Treatment	F1-WP-22,347-01	$ 4,300
TEXAS			
Rice University Houston			
Grady, Jr., C. P. Leslie Dept. of Chemical Eng.	Bacterial Solids Recovery for the Total Oxygen Demand Test	WPPM-16,744(1)	* 500**
Texas Tech. College Lubbock			
Ward, Charles Richard Dept. of Horticulture and Park Management	Ecology of Playas Modified for the Mutual Benefit of Public Health, Agriculture and Wildlife	WPPM-15,212(1) F1-WP-15,212-02	500** 5,500
UTAH			
Utah State University Logan			
Hassler, Thomas J. Dept. of Wildlife Resources	Effect of Anionic Detergent on Rainbow Trout	WPPM-13,353(R2)	7,000
University of Utah Salt Lake City			
Knight, Allen Warner Dept. of Zoology and Entomology	Ecology of Stoneflies in the Intermountain Region	WPPM-12,746(R1) F1-WP-12,746-02	500** 6,500
Warnick, Stephen L. Dept. of Zoology and Entomology	Bioassays to Determine Toxicity of Pesticides to Aquatic Insects	F1-WP-20,175-01	7,000
VIRGINIA			
Virginia Polytechnic Inst. Blacksburg			
Harrison, John Dept. of Civil Engineering	Dewatering of Sewage Sludge by Syneresis	F1-WP-21,999-01	4,300

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**Supply Grant to Sponsoring Institution - 1963 funds.

Water Pollution Control / Research Fellowships / Fiscal Year 1963

LOCATION AND RECIPIENT	PROJECT TITLE	NUMBER	AMOUNT
WASHINGTON			
University of Washington Seattle			
Welch, Eugene B. College of Fisheries	Sublethal Effects of Insecticides on Fish	WPPM-8,821(R1)	$ _____ * 500**
WISCONSIN			
University of Wisconsin Madison			
Clesceri, Nicholas L. Dept. of Civil Engineering	The Hydrolysis and Algal Utilization of Condensed Phosphates	WPPM-10,713(R1)	500**
Fruh, Erwin G. Dept of Civil Engineering	Role of Natural Water Particulates in Aqueous Chemistry of an Element	WPPM-16,455(1)	_____ * 500**
Kumke, Gordon W. Dept. of Civil Engineering	Organic Compounds in Natural Waters	WPPM-16,457(1)	_____ * 500**
FOREIGN			
NETHERLANDS			
Delft Technological Univ. Delft			
Johnson, Robert LeRoy International Course in Hydraulic Engineering	European Research in Sanitary Engineering Research Problem to be Selected	F1-WP-20,352-01	5,300
SWITZERLAND			
Swiss Federal Inst. of Technology, Zurich			
Clesceri, Lenore S. Dept. of San. Engineering	Mechanism of Denitrification of Sewage Effluents	F2-WP-10,712-01	6,280
Clesceri, Nicholas Louis Dept. of San. Engineering	Degradation of Condensed Phosphates During Sewage Treatment	F2-WP-10,713-01	6,780

*Active 1963 - Supported by funds awarded in 1962

**Supply Grant to Sponsoring Institution - 1963 funds.

WATER POLLUTION CONTROL

TRAINING GRANTS FISCAL YEAR 1963

SUMMARY OF AWARDS BY STATES

State	No.	Amount
California	3	$ 88,563
Indiana	1	15,023
Iowa	1	24,082
Maine	1	17,107
Massachusetts	1	36,962
Michigan	2	71,026
Minnesota	1	22,716
Montana	1	37,500
New York	6	217,189
North Carolina	1	35,410
Oklahoma	3	80,514
Oregon	3	88,412
Pennsylvania	1	40,329
South Carolina	2	46,800
Texas	3	74,858
Utah	1	28,512
Virginia	1	35,573
Washington	1	23,165
Wisconsin	2	116,259
Totals: 19 States	35 Grants	$1,100,000

WATER POLLUTION CONTROL

TRAINING GRANTS

FISCAL YEAR 1963

LOCATION & PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
CALIFORNIA			
Stanford University Stanford			
Eliassen, Rolf, Ph. D. Dept. of Civil Engineering	Interdisciplinary Management of Water Resources and Water Quality	1T1-WP-38-01	$29,807
Kruger, Paul, Ph. D. Dept. of Civil Engineering	Use of Radioisotope Techniques in Water Pollution Control	5T1-WP-9-02	35,000
University of California Davis			
Scott, Verne H., Ph. D. Dept. of Irrigation	Irrigation Effects on Control of Water Pollution	5T1-WP-7-02	23,756
INDIANA			
Purdue University Lafayette			
Bloodgood, Done E., Ph. D. Dept. of Civil Engineering	Engineering and Design of Water Pollution Control Facilities	5T1-WP-13-02	15,023
IOWA			
Iowa State University Ames			
Bauman, Robert E., Ph. D. Dept. of Civil Engineering	Chemistry of Waste Treatment Including Nuclear Wastes	1T1-WP-45-01	24,082
MAINE			
University of Maine Orono			
Sproul, Otis J., Sc. D. Dept. of Civil Engineering	Training Program in Water Pollution Microbiology	5T1-WP-17-02	17,107

Water Pollution Control / Training Grants / Fiscal Year 1963

LOCATION & PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
MASSACHUSETTS			
Tufts University Medford			
Hanes, Bruce N., Ph. D. Dept. of Civil Engineering	Water Pollution Control and Public Health Engineering	1T1-WP-40-01	$36,962
MICHIGAN			
University of Michigan Ann Arbor			
Lagler, Karl F., Ph. D. Dept. of Fisheries	Physiological Action of Water Pollutants	5T1-WP-16-02	20,903
Velz, Clarence J., Prof. Dept. of Environmental Health	Training in Water Pollution Control and Public Health	5T1-WP-15-02	50,123
MINNESOTA			
University of Minnesota Minneapolis			
Schroepfer, George J. Dept. of Civil Engineering	Sanitary Engineering and Water Resources Program	1T1-WP-33-01A1	22,716
MONTANA			
Montana State College Bozeman			
Wright, John C., Ph. D. Dept. of Botany and Bacteriology	Physical and Chemical Aspects of Water Pollution	5T1-WP-1-02	37,300
NEW YORK			
Cornell University Ithaca			
Falkson, Louis, Ph. D. Dept. of Economics	Training in Economic Aspects of Water Pollution	5T1-WP-4-02	30,926
Gates, Charles D., Ph. D. Dept. of Sanitary Eng.	Sanitary Engineering and Water Resources Program	5T1-WP-3-02	38,000
Lynn, Walter R., Ph. D. School of Engineering	Systems Engineering in Water Pollution Control	1T1-WP-42-01 3T1-WP-42-01S1	34,480 6,763
Manhattan College New York			
Eckenfelder W.W.,Jr.,Ph.D. Dept. of Civil Engineering	Summer Institute in Water Supply and Pollution Control	1T1-WP-32-01 3T1-WP-32-01S1	7,020 4,860

Water Pollution Control / Training Grants / Fiscal Year 1963

LOCATION & PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
NEW YORK(Cont.)			
Manhattan College New York (Cont.)			
McCabe, Brother Joseph, Ph.D. Dept. of Civil Engineering	Training of Professional Specialists in Water Pollution Control	5T1-WP-26-02	46,000
New York University New York			
Dobbins, William E., Ph. D. Dept. of Civil Engineering	Water Supply and Water Pollution Control Engineering	5T1-WP-24-02	49,140
NORTH CAROLINA			
University of North Carolina Chapel Hill			
Weiss, Charles M., Ph. D. Dept. of Sanitary Eng.	Training Program in Water Pollution Control Engineering	5T1-WP-6-02	35,410
OKLAHOMA			
Oklahoma State University Stillwater			
Dorris, Troy C., Ph. D. Dept. of Zoology	Program for Aquatic Biology Specialists in Water Pollution	5T1-WP-23-02	32,999
Gaudy, Anthony F., Jr.,Ph.D. School of Civil Engineering	Bio-Engineering Training in Water Pollution Control	5T1-WP-19-02	28,512
University of Oklahoma Norman			
Reid, George W., Ph. D. Dept. of Sanitary Science and Public Health	Water Resource Development Training Program	1T1-WP-29-01	19,003
OREGON			
Oregon State University Corvallis			
Burgess, Fred J., Prof. Dept. of Civil Engineering	Engineering Control of Waste Water Disposal Training Program	5T1-WP-25-02 3T1-WP-25-02S1	24,992 19,252
Curl, H. C., Ph. D. Dept. of Oceanography	Program for Water Pollution Specialists in Algal Biology	5T1-WP-21-02	19,999
Warren, Charles E., Ph. D. Dept. of Fish and Game Mgt.	Freshwater and Marine Pollution Biology Program	1T1-WP-52-01	24,169

Water Pollution Control / Training Grants / Fiscal Year 1963

LOCATION & PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
PENNSYLVANIA			
University of Pittsburgh Pittsburgh			
Nutt, John M., Ph. D. Dept. of Civil Engineering	Water Resources and Water Pollution Control Engineering	1T1-WP-41-01	$40,329
SOUTH CAROLINA			
Clemson College Clemson			
Rich, Linvil G., Ph. D. School of Engineering	Summer Institute in Process Engineering of Waste Water Treatment	5T1-WP-5-02	24,800
Rich, Linvil G., Ph. D. School of Engineering	Graduate Program in Process Engineering of Waste Water Treatment	5T1-WP-8-02	22,000
TEXAS			
William Marsh Rice Univ. Houston			
Busch, A. W., Ph. D. Dept. of Chemical Eng.	Chemical Engineering Training in Advanced Waste Treatment	5T1-WP-12-02	30,000
Busch, A. W., Ph. D. Dept. of Chemical Eng.	Biological and Engineering Process Design in Water Pollution Control	1T1-WP-44-01	17,404
University of Texas Austin			
Gloyna, Earnest F., Ph.D. Dept. of Civil Engineering	Water Resources and Water Pollution Control Training Program	5T1-WP-20-02	27,454
UTAH			
University of Utah Salt Lake City			
Gaufin, Arden R., Ph. D. Dept. of Zoology & Entomology	Limnology and Sanitary Biology Aspects of Water Pollution	1T1-WP-54-01	28,512
VIRGINIA			
Virginia Polytechnic Inst. Blacksburg			
Parsons, William A., Ph.D. Dept. of Civil Engineering	Graduate Training in Water Pollution Technology	1T1-WP-31-01	35,573

Water Pollution Control / Training Grants / Fiscal Year 1963

LOCATION & PROGRAM DIRECTOR	PROGRAM TITLE	GRANT NO.	AMOUNT
WASHINGTON			
Washington State University Pullman			
Dunstan, Gilbert H., Ph.D. Dept. of Civil Engineering	Water Pollution Control and Waste Water Disposal Engineering	5T1-WP-11-02	$23,165
WISCONSIN			
University of Wisconsin Madison			
Hasler, Arthur D., Ph. D. Dept. of Zoology	Training Program for Aquatic Scientists in Hydrobiology	5T1-WP-2-02	39,000
Lee, G. Fred, Ph. D. Dept. of Civil Engineering	Training Program in Water and Water Pollution Chemistry	5T1-WP-22-02	77,259

WATER POLLUTION CONTROL

DEMONSTRATION GRANTS FISCAL YEAR 1963

SUMMARY OF AWARDS BY STATES

State	No.	Amount
California	3	$195,955
Florida	2	130,962
Maryland	1	14,069
Massachusetts	1	6,000
Michigan	1	40,000
Missouri	2	44,549
New Jersey	1	20,000
North Dakota	1	5,450
Tennessee	1	50,000
Washington	1	14,516
Totals: 10 States	14 Grants	$521,501

WATER POLLUTION CONTROL
DEMONSTRATION GRANTS

FISCAL YEAR 1963

LOCATION & PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
CALIFORNIA			
Engineering-Science, Inc. Oakland			
Ludwig, Harvey F. President	Improved Waste Treatment Design of Submarine Disposal	WPD 12-01(R1)-63	$ 35,695
Stanford University Stanford			
Eliassen, Rolf, Sc. D. Dept. of Civil Engineering	Reclamation of Reusable Water from Sewage	WPD 21-01-63	40,260
Univ. of Southern Calif. Los Angeles			
Chambers, Leslie A.,Ph.D. Hancock Foundation	Feasibility of Waste Disposal in the Marine Environment	WPD 1-02-63	120,000
FLORIDA			
University of Florida Gainesville			
Kiker, John E., Jr.,Ph.D. Dept. of Civil Engineering	A Study of Estuarine Pollution Problems	WPD 15-02-63	78,430
Black, A. P., Ph. D. Chemistry and San. Science	Disinfectant and Physiological Effects of Iodine for Water Supply Treatment	WPD 19-01-63	52,532
MARYLAND			
Strandberg, Carl H. Individual, Silver Spring	Aerial Water Quality Reconnaissance Demonstration	WPD 20-01-63	14,069
MASSACHUSETTS			
Massachusetts Health Res. Inst. Inc., Boston			
Tompkins, William A. Fisheries & Game Field Hdqrs.	Massachusetts Pesticide Study	WPD 25-02-63	6,000

Water Pollution Control / Demonstration Grants / Fiscal Year 1963

LOCATION & PROJECT DIRECTOR	PROJECT TITLE	GRANT NO.	AMOUNT
MICHIGAN			
National Sanitation Fdn. Michigan School of Public Health, Ann Arbor			
Vaughan, Henry F. President	Detroit Metropolitan Environmental Study	WPD 5-02-63	$ 40,000
MISSOURI			
Washington University St. Louis			
Ryckman, D. W., Sc. D. Dept. Environmental Eng.	Improved Technique for Recovery of Trace Organic Pollutants	WPD 24-02-63	26,887
Water and Sewerage Technical School, Neosho			
Caughran, Lloyd Director	Water and Sewerage Technical School	WPD 2-02-63 WPD 2-02S1-63	12,578 5,084
NEW JERSEY			
Division of Fish & Game Lebanon			
Pyle, A. Bruce, Sr. Bureau of Fisheries Lab.	Fish and Game Unit Team for Evaluation of Pollution	WPD 4-02-63	20,000
NORTH DAKOTA			
North Dakota State Health Dept., Bismarck			
Van Heuvelen, Willis Chief, Environmental Health and Engineering Services	Potato Processing and Domestic Wastes Treatment by Mechanical Aeration	WPD 9-02-63	5,450
TENNESSEE			
Tennessee Game & Fish Commission, Nashville			
Stubbs, John M., Supervisor Pollution Control and Warmwater Streams	Development of Fish Protection Surveillance System	WPD 3-02-63	50,000
WASHINGTON			
University of Washington Seattle			
Sylvester, Robert O. Professor of San. Engineering	Influence of Site Preparation on Quality of Impounded Water	WPD 6-02-63	14,516

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